

SHWETA PRASAD-MULCARE

WORK EXPERIENCE

May 2005 to Present George Washington University Washington, DC
Research Assistant

- Worked on independent project in solid state physics laboratory
- Used the Atomic Force Microscope (AFM) and Chemical Force Microscopy (CFM) to study interactions between opposing surfaces.
 - Skilled at imaging soft materials, both in solution and in air.
 - Chemically modified tips with self assembled monolayers (SAMs) of ODT (1-octadecanethiol) and MUA (11-Mercaptoundecanoic acid) in order to probe the electronegative structure of the sample (the inner membrane of a dialyzer fibre)
 - Gained extensive experience in functionalizing AFM tips with thiol linkers.
 - Developed titration curves to measure molecular forces of surface vs. pH of the ambient solution.
 - Gained proficiency in analyzing force volume curves using Matlab.
- Conducted scientific literature searches to gather and summarize information

Aug 2005 to Dec 2005 George Washington University Washington, DC
Teaching Assistant

- Instructed physics 001 laboratory

Sep 2002 to May 2003 Institute for Biomedical Sciences Washington, DC
Office Assistant

- Engaged in clerical work and office maintenance

Oct 2001 to Sep 2002 Xando-Cosi Arlington, VA
Server, Barista, Hostess

- Waited tables
- Prepared food and beverages
- Greeted and seated restaurant patrons

Jun 1997 to Jun 2000 Suchak's Hospital Mumbai, India
Yoga Instructor

- Instructed 45 minute class; Monday through Friday
- Emphasis on *batha yoga*
- Average class size: 20; ages 7 through 80

Aug 1997 to Jun 2000 Suchak's Hospital Mumbai, India

Office Assistant

- Researched for and drafted speeches for Dr. Suchak and staff
- Assisted in clinical research projects
- Handled daily paperwork

VOLUNTEER EXPERIENCE

Aug 2004 to Jan 2005 American Red Cross Washington, DC

Coordinator, Youth Task Force (YTF)

- Served as Youth Advisor
 - Coordinator, Youth Advisor team and several YTF projects
 - Attended YTF and Youth Advisor meetings and events and offered a critique of the program and the role of the Youth Advisor in it
 - Offered support and advice to members of the YTF, especially during fund raising campaigns and service implementation projects.
- Established project to document living history of Youth Services and conducted oral interviews in furtherance of this end.
- Edited and formatted the American Red Cross calendar of events for the upcoming school year
- Edited the Youth Task Force quarterly newsletter
- Conducted research and summarized data about demographics and crime statistics for counties in metro D.C area that have Youth Services programs.

Dec 1997 & Dec 1999 Suchak's Hospital Mumbai, India

Volunteer, Suchak's Hospital Breast Feeding Awareness Campaign

- Participated in street-to-street activities, promoting awareness among mothers and mothers-to-be

Jun 1998 to Aug 1998 Army Wives Welfare Association Ranchi, India

Volunteer

- Helped to start workshops in screen printing, pottery, and tailoring
- Assisted in arranging free OB-GYN check-ups for soldiers' wives

Jul 1995 to May 1997 Mother Teresa Home Mumbai, India

Volunteer

- Read to and spent time with orphans and elderly, approximately 5 hours per week

EDUCATION

Aug 2002 to Present George Washington University Washington, DC
BS/Physics

- Graduated with special departmental honors in May 2006
- Cumulative **GPA 3.93**
- Specific coursework in biophysics of microsystems include topics such as: Random Walks, Friction, and Diffusion; The Low-Reynolds-Number World; Entropy, Temperature and Free Energy; Chemical Forces and Self Assembly; Cooperative Transition in Macromolecules; Enzymes and Molecular Machines; Electroosmotic effects.

Jun 1993 to Mar 1995 Mithibai College(Senior High) Mumbai, India

- 11th & 12th standard certificate
- Emphasis on sciences in coursework
- Graduated with distinction

ADDITIONAL COURSEWORK

Dec 1993 to Mar 1994 Nazareth's Speakers Academy Mumbai, India

- Course in public speaking.

Elected "**Best Speaker**" by judges in the graduating seminar.

AWARDS AND HONORS

May 2004 to Aug 2004 George Washington University Washington, DC

Howard Hughes summer scholar

- Commenced project using solid state nuclear magnetic resonance (NMR) to study synthetic membrane proteins.
- Designed and built a thermostat to maintain protein within one degree Fahrenheit of desired temperature.

Member Phi Beta Kappa, Alpha Chapter, Washington DC

EXTRACURRICULAR ACTIVITIES

Aug 2004 to Present George Washington University Washington, DC

Founder and President, "Physics and Philosophy Club"

- Established the Physics and Philosophy Club in Fall of 2004
- Club members include faculty and students of the Physics and Philosophy departments.
- The club meets at least once every month.
- Discussions have included such topics as probability, randomness, knowledge and causality, artificial intelligence, information and its

relation to physical reality, theories of science, metaphysics and ethics,
and science and spirituality.

COMPUTER SKILLS

Possess working knowledge of Microsoft Office, Microsoft Windows,
Word, and Excel

LANGUAGES

Spoken and read fluently: Hindi

REFERENCES

Dr. Mark Reeves
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George Washington University
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Dr. Cornelius Bennhold
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